	National Institute of Technology Meghalaya An Institute of National Importance	CURRICULUM

Programme	**Bachelor of Technology in Electronics and Communication Engineering**	Year of Regulation	**2018-19**
Department	**Electronics and Communication Engineering**	Semester	**VIII**

Course Code	Course Name	Credit Structure				Marks Distribution			
		L	T	P	C	INT	MID	END	Total
EC 424	**Internet of Things**	**3**	**0**	**0**	**3**	**50**	**50**	**100**	**200**

Course Objectives	Course Outcomes		
Familiarization to the fundamentals IOT applications		CO1	Comprehend the essentials of IoT and its applications
Design IOT systems with energy efficient computing platform sensors and cloud platform		CO2	Understand the concepts of IoT Architecture Reference model and IoT reference architecture
Understand various layer protocols and its usage		CO3	Apply IP based protocols and Authentication Protocols for IoT
		CO 4	Analyze various IoT Application layer Protocols.
		CO 5	Design IoT-based systems for real-world problems.

No.	COs	Mapping with Program Outcomes (POs)												Mapping with PSOs			
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
1	CO1	**2**	**2**	**-**	**-**	**-**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**1**	**-**	**-**
2	CO2	**2**	**3**	**2**	**2**	**-**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**1**	**-**	**-**
3	CO3	**2**	**3**	**2**	**3**	**-**	**1**	**-**	**-**	**-**	**-**	**-**	**2**	**2**	**1**	**-**	**-**
4	CO4	**2**	**2**	**2**	**3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**2**	**1**	**-**	**-**
5	CO5	**-**	**-**	**-**	**2**	**-**	**2**	**3**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**2**	**1**

SYLLABUS

No.	Content	Hours	COs
I	Introduction to IoT, Sensing, Actuation, Basics of Networking Wifi , Bluetooth, Zigbee Communication Protocols , Sensor Networks.	**12**	**CO1**
II	Sensor Networks, Machine-to-Machine Communications. Interoperability in IoT, Introduction to Arduino Programming, Integration of Sensors and Actuators with Arduino and Rasberry Phi .	**12**	**CO2**
III	Introduction to Python programming, Introduction to Raspberry. Implementation of IoT with Raspberry Pi, Introduction to SDN. SDN for IoT, Data Handling and Analytics, Cloud Computing.	**8**	**CO3**
IV	Cloud Computing, Sensor-Cloud. Fog Computing, Smart Cities and Smart Homes Connected Vehicles, Smart Grid, Industrial IoT. Industrial IoT, Case Study: Agriculture, Healthcare, Activity Monitoring.	**8**	**CO1, CO2, CO3**
Total Hours		**36**	

Essential Readings

1. Pethuru Raj and Anupama C. Raman "The Internet of Things: Enabling Technologies, Platforms, and Use Cases", Ist edition CRC Press, 2017
2. Arshdeep Bahga and Vijay Madisetti "Internet of Things: A Hands-on Approach", Ist edition Orient Blackswan Private Limited , 2015
3. Hersent, Olivier, David Boswarthick, and Omar Elloumi. The internet of things: Key applications and protocols. John Wiley & Sons, 2011.
4. Buyya, Rajkumar, and Amir Vahid Dastjerdi, eds. Internet of Things: Principles and paradigms. Elsevier, 2016.

Supplementary Readings

1. Bassi, Alessandro, et al, "Enabling things to talk", Springer-Verlag Berlin An, 2016.